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M E M O R A N D U M

TO: Susan Sylvester, Director, Operations and Hydrologic Data Management Department

FROM: SFWMD Staff Environmental Advisory Team

DATE: March 9, 2010

SUBJECT: Weekly Environmental Conditions for Systems Operations

Summary

Discharge from Lake Kissimmee averaged 1536 cubic feet per second (cfs) at S65 over the week**.** Lake Okeechobee stage is 13.55 feet NGVD, which is 0.03 feet lower than a week ago, 0.03 feet higher than a month ago, 0.99 feet higher than it was a year ago, and 0.28 feet higher than the simulated average using the current regulation schedule. Average salinity levels in the Saint Lucie estuary are good for the oyster, *Crassostrea virginica,* location in the estuary and time of year. In the Caloosahatchee Estuary, average surface salinity remained about the same. Since the 30-day average salinity at the Ft. Myers station is 9.4 practical salinity units, conditions are good in the upper estuary. Conditions in the lower estuary are good. The Greater Everglades continue to follow a typical dry season pattern with water levels continuing to decline overall throughout the region. Salinity was mostly stable in Florida Bay over the past week.

Weather Conditions and Forecast

Temperatures will be warming up through the week with rain expected for Friday. Moisture and patches of light rain are streaming across the area as a cold front stalls along the northern Gulf coast. Daytime heating will generate some scattered shower activity mainly over the interior Wednesday and Thursday. Some scattered shower activity will pop up to the northeast Wednesday night along with an increase in southerly winds. A low pressure system over the eastern U.S. will then move the cold front south through most of the District Friday and Friday night, bringing widespread moderate to heavy showers and thunderstorms. A few showers will affect southeastern areas as the front exits to the south Saturday morning. Cool and dry conditions will then set in with the potential for more rains next Wednesday. The next ten days precipitation outlook is above average with moderate confidence.

KISSIMMEE WATERSHED

Over the past week the Kissimmee Basin received 0.2 inches of rainfall. Rainfall in the last 30 days totaled 2.1 inches in the Upper Basin (73% of normal) and 1.6 inches in the Lower Basin (63% of normal) (SFWMD Daily Rainfall Report 3/9/2010).

Upper Kissimmee Basin

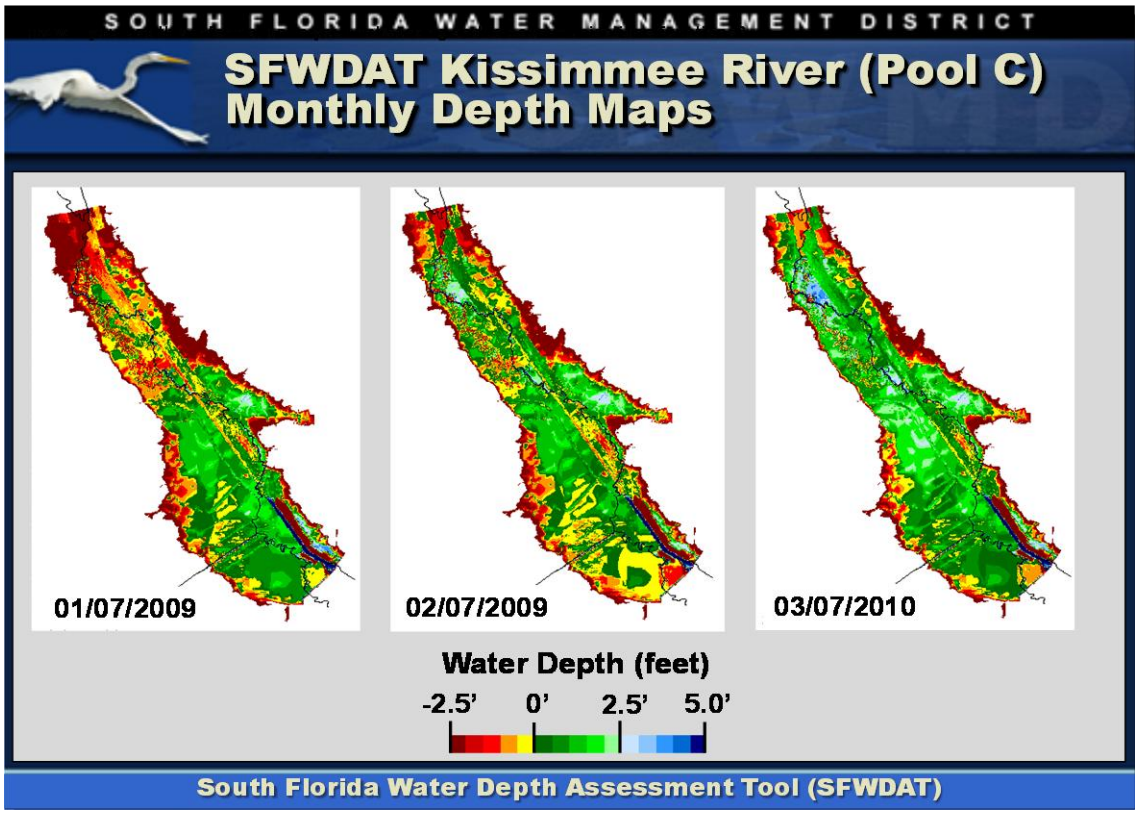
- Stages in the Kissimmee Chain of Lakes (KCOL) are at or within 0.1 feet of regulation schedule (USACE Kissimmee River Report 3/8/2010 and/or previous-**week averages** from SFWMD **DualTrend). Lakes marked with (*) are currently being operated under temporary deviations; the departures shown are from the temporary schedules (SFWMD Operations Control Division)**.
  - Lakes Hart and Mary Jane are less than 0.1 feet below the temporary deviation schedule (*).
  - Lakes Myrtle, Preston, and Joel are less than 0.1 feet above the temporary deviation schedule (*).
  - Lakes in the Alligator Chain are approximately 0.1 feet below the temporary deviation schedule (*).
  - Lake Gentry is less than 0.1 feet below regulation schedule.
  - East Lake Tohopekaliga is 0.1 feet below the temporary deviation schedule (*).
  - Lake Tohopekaliga is at the temporary deviation schedule (*); discharge at S61 averaged 891 cfs over the past week.
  - Lake Kissimmee approximately 0.1 feet below the temporary deviation schedule (*).
  - Headwater stage at S65 averaged 51.2 feet the past week.
  - Discharge at S65 averaged 1536 cfs over the past week.
  - Temporary deviations are in place to enhance snail kite and apple snail habitat in KCOL lakes including early recessions on Lakes Tohopekaliga and East Tohopekaliga and a slower recession for Lake Kissimmee.
  - FFWCC has postponed the hydrilla treatment in Lake Cypress until the week of April 15.

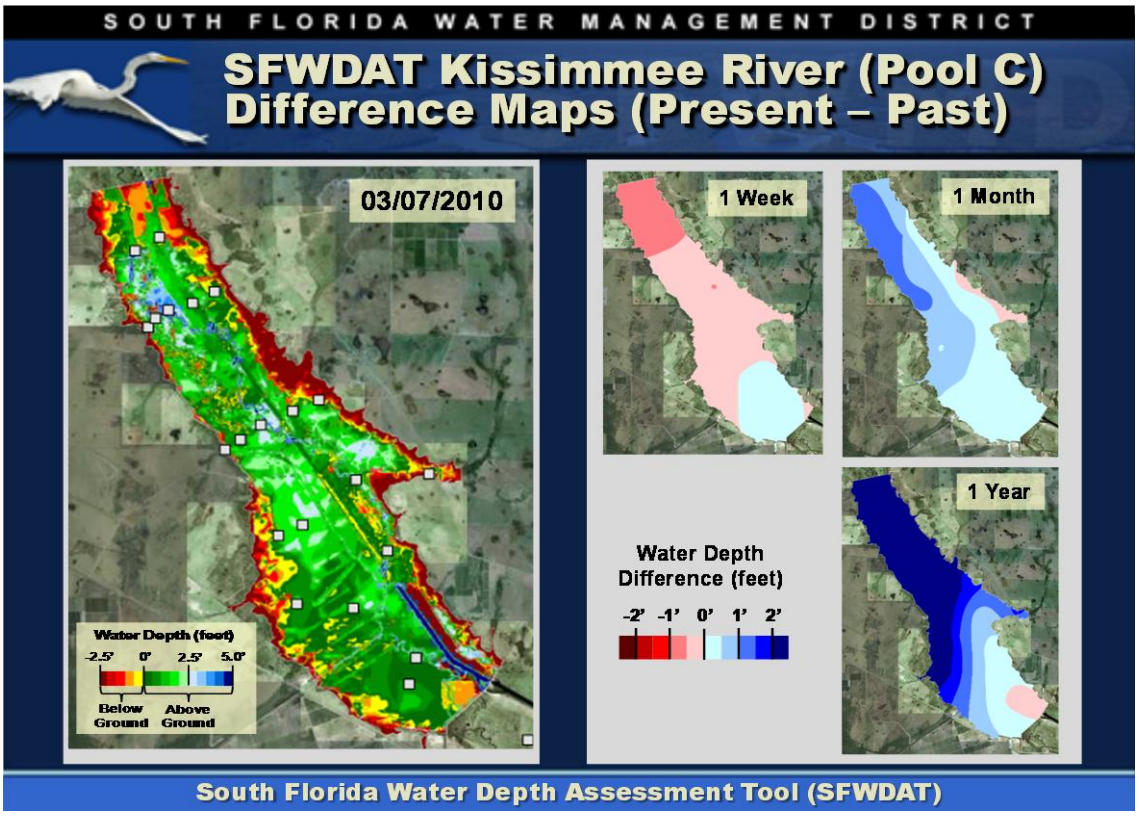
Lower Kissimmee Basin (discharges, stages, and dissolved oxygen concentrations are **weekly averages** from SFWMD **DualTrend).**

- Discharge at S65-A averaged 1497 cfs over the past week.
- Discharge at S65-C averaged 1938 cfs over the past week, with headwater stage averaging 34.2 feet.
- Discharge at S65-D averaged 2140 cfs over the past week.
- Discharge at S65-E to Lake Okeechobee averaged 1810 cfs over the past week.
- Water depths on the Kissimmee River floodplain average 1.0 feet in the Phase I restoration area (SFWDAT 3/7/2010). SFWDAT depth and difference maps are attached.
- River channel dissolved oxygen (DO) concentrations in the Phase I area averaged 7.2 mg/L over the past week, well above the level of concern of ≤2.0 mg/L.

Water Management Recommendations

No changes in water management are being requested from Operations Control at this time.





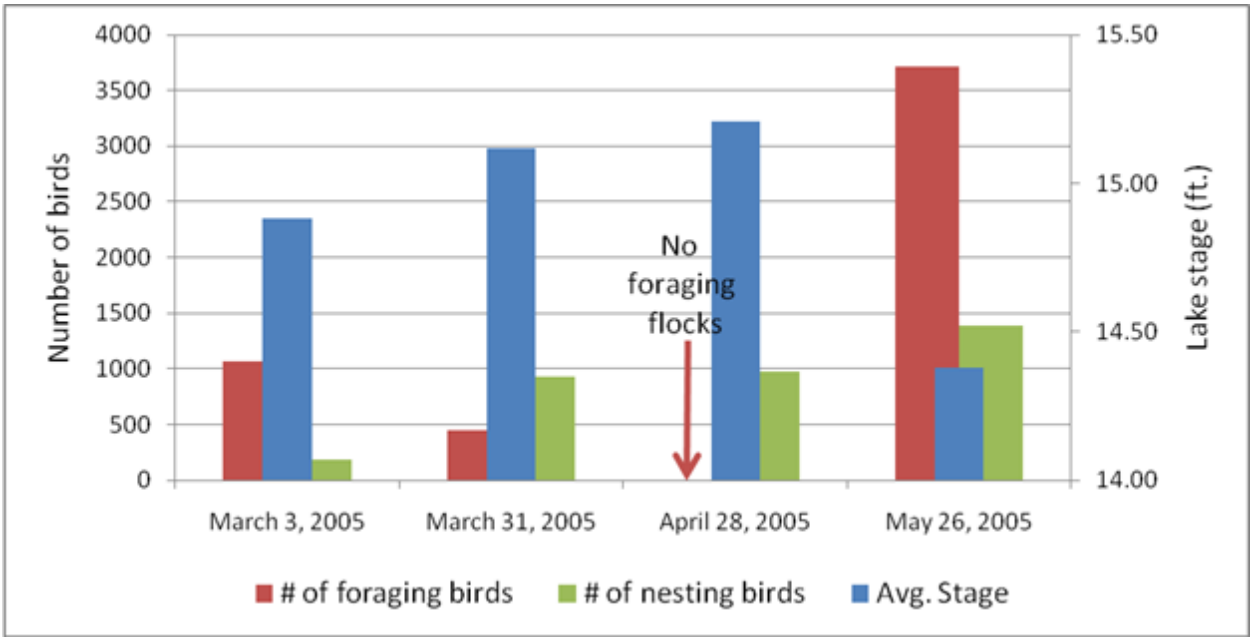
LAKE OKEECHOBEE

According to the USACE web site, Lake Okeechobee stage is 13.55 feet NGVD for the period ending at midnight March 8, 2010; which is 0.03 feet lower than a week ago, 0.03 feet higher than a month ago, and 0.99 feet higher than a year ago. The current stage is 0.93 feet below the historical average for this date and 0.28 feet higher than the simulated average using the current regulation schedule (LORS2008). Lake stage has changed little over the past 14 weeks. Total reported inflows are approximately 1802 cfs and include flows through S65E (1787 cfs) (1810 cfs weekly average), with the balance coming from Fish Eating Creek (15 cfs). According to Raindar 0.4 inches of rain fell directly over the lake this past week. Lake net outflows were reported as 543 cfs with 326 cfs leaving through S77 and 215 cfs leaving through the L8. However, the second 7 days of the 21 pulse release to the Caloosahatchee started early this morning and real time graphical plots indicate an approximate 900 cfs flow through S77 after the pulse started.

FWC scientists reported that the snail kite nest at the northern end of the lake now has two chicks and that there are numerous Great Blue Heron nests with chicks in small groups scattered around the lake.

Water Management Recommendations

Overall, lake ecological conditions continue to be good, although there appears to be a general consensus among lake scientists that there is an immediate need for a dry season recession in lake stage to help trigger the onset of wading bird breeding and to ensure successful rearing of chicks to fledging. Additionally, a reversal of any significant magnitude at this time would be detrimental to wading birds. Foraging and nesting data from a 2005 lake reversal (below) clearly demonstrates the effects of such reversals. Consequently, any beneficial operational activities which might reduce inflows to the lake, or increase discharges to the estuaries or south in sufficient quantity to result in a decline in lake stage would have potential positive ecological effects at this time.



Date	Avg. Stage	# of foraging birds	# of nesting birds
March 3, 2005	14.88	1070	189
March 31, 2005	15.12	442	925
April 28, 2005	15.21	0	975
May 26, 2005	14.38	3719	1384

ESTUARIES

St. Lucie Estuary

Over the past week, flow averaged 0 cfs at S308 and 0 cfs at S-80. Provisional data indicate that discharge averaged 133 cfs at S-49 on C-24 and 88 cfs at S-97 on C-23. The current weekly average salinities (in bold) at the three monitoring sites in the St. Lucie Estuary are given below in practical salinity units (psu), along with the previous week's (in parenthesis).

	Weekly Average Salinity (psu)		
Sampling Site	**Surface**	**Bottom**	**Envelope**
HR1 (N. Fork)	**16.4** (17.3)	**18.5** (19.3)	
US1 Bridge	**19.5** (19.6)	**19.9** (20.3)	8.0 – 25.0
A1A Bridge	**27.3** (26.5)	**28.2** (28.5)	20.0 – 31.0

Salinity decreased over the past week, except the surface salinity at A1A Bridge. Weekly average salinity is within the preferred range at both the Roosevelt and A1A

Bridges. Salinity conditions in the estuary are good considering the time of year, the location in the estuary, and salinity preference of the oyster, *Crassostrea virginica*.

Water Management Recommendations:

The Lake Regulation Schedule calls for releases to the St. Lucie estuary up to 1170 cfs. A seven day pulse release with an average of 400 cfs from S-80 is recommended. Vertical profiles of dissolved oxygen, salinity, temperature, and Chl a would be conducted by the Coastal Ecosystems Division downstream of S-80 to determine if salinity stratification is causing hypoxic conditions beyond background conditions and if phytoplankton densities are too high.

Caloosahatchee Estuary

During the past week, flow averaged 783 cfs at S-77, 719 cfs at S-78, and 893 cfs at S-79. The U.S. Army Corps of Engineers completed the first of three sequential seven-day pulse 800 cfs average pulse releases. The second seven-day pulse has been initiated. The concentration of chlorides at the Olga Plant was 80 ppm yesterday. The current weekly average salinities (in bold) at the six monitoring sites in the Caloosahatchee Estuary are given below in practical salinity units (psu), along with the previous week's (in parenthesis).

Weekly Average Salinity (psu)		
Sampling Site	**Surface**	**Bottom**
S-79 (Franklin Locks)	**0.9** (1.9)	**0.9** (2.0)
BR31	**1.3** (2.5)	**1.6** (2.8)
Val I75	**2.2** (3.1)	**3.2** (4.6)
Ft. Myers Yacht Basin*	**8.3** (9.5)	**9.7** (11.7)
Marker 52	**8.7** (9.8)	**10.9** (13.1)
Cape Coral	**16.5** (17.4)	**17.4** (19.1)
Shell Point	**26.6** (27.5)	**27.0** (27.9)
Sanibel	**30.0** (30.7)	**31.2** (31.4)

*values are estimated using a regression relationship between salinity at Marker 52 and salinity at Ft. Myers

Average salinity decreased throughout the estuary over the past week. Since the estimated 30-day average salinity at Ft. Myers is 9.4 psu conditions are good in the upper estuary. Salinities at the Cape Coral Bridge are within the preferred range for the oyster, *Crassostrea virginica.* Salinities at Shell Point and the Sanibel Causeway indicate that conditions are good for seagrass in the lower estuary and San Carlos Bay. Therefore, conditions in the lower estuary and San Carlos Bay are good.

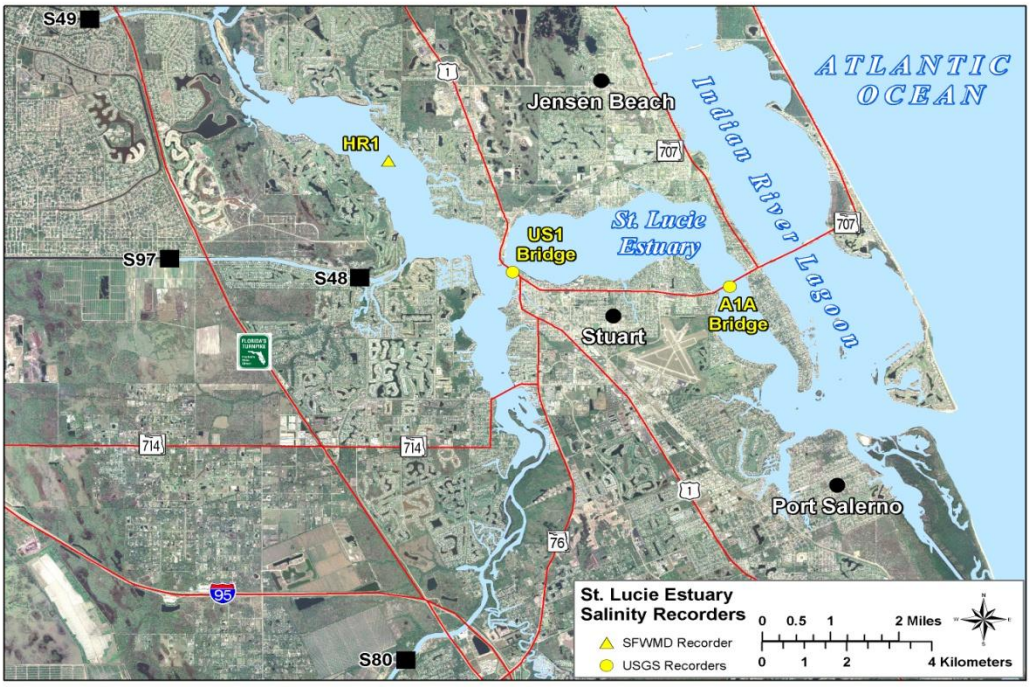
Monitoring data collected by the River, Estuary and Coastal Observing Network (RECON) of Sanibel-Captiva Conservation Foundation (SCCF) indicated that dissolved

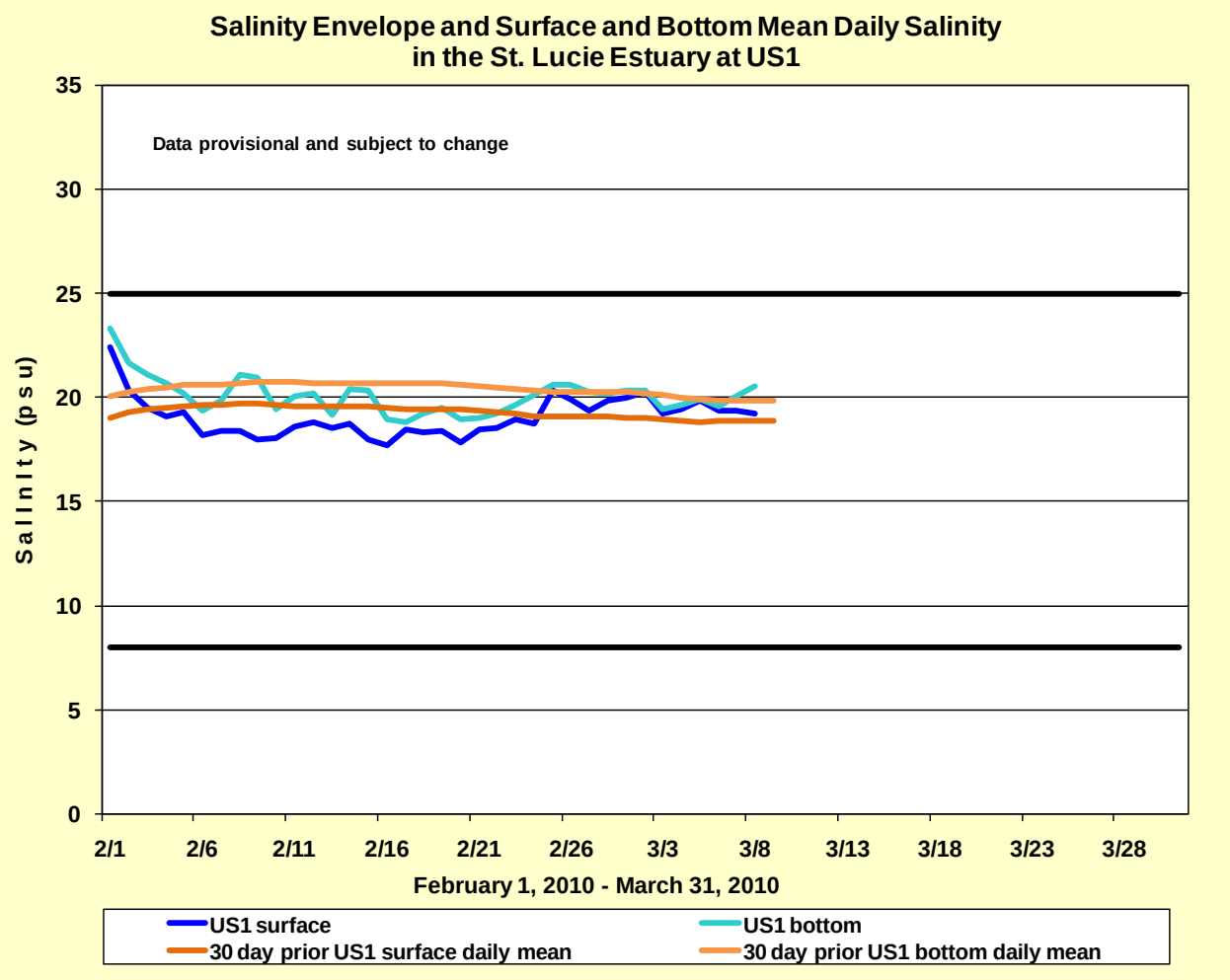
oxygen concentrations ranged between 7.3 and 9.4 mg/l at Shell Point and Ft. Myers. Chlorophyll *a* at Ft. Myers ranged between 1.8 and 10.0 ug/l. At Shell Point concentration generally ranged between 1.9 and 30 ug/l with a few spikes between 52 – 75 ug/l.

FWRI (Fish and Wildlife Research Institute) reports that *Karenia brevis*, the Florida red tide organism, was not detected in water samples collected this week alongshore between Pinellas and Collier counties or offshore of the Florida Keys (Monroe County).

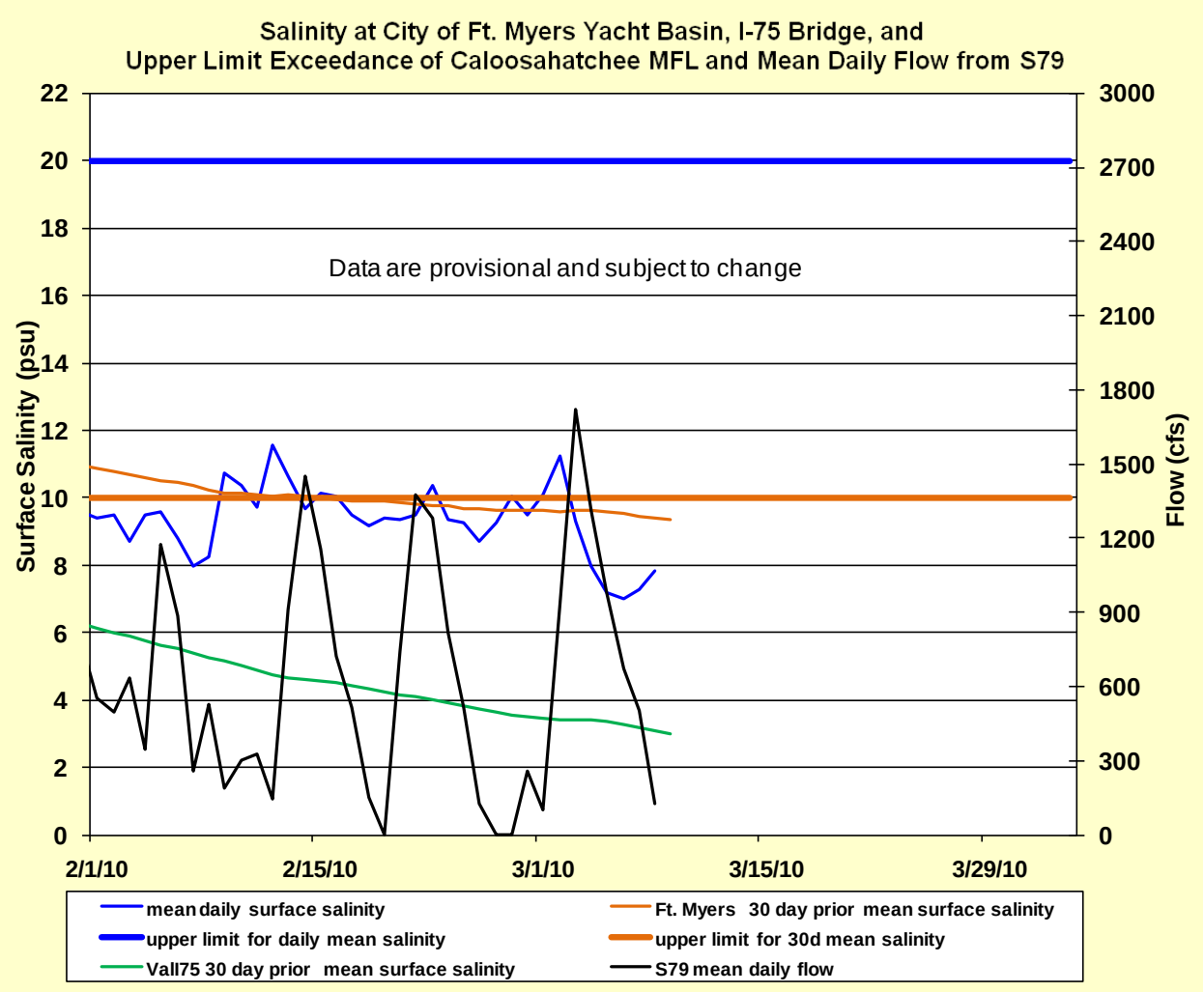
Water Management Recommendations:

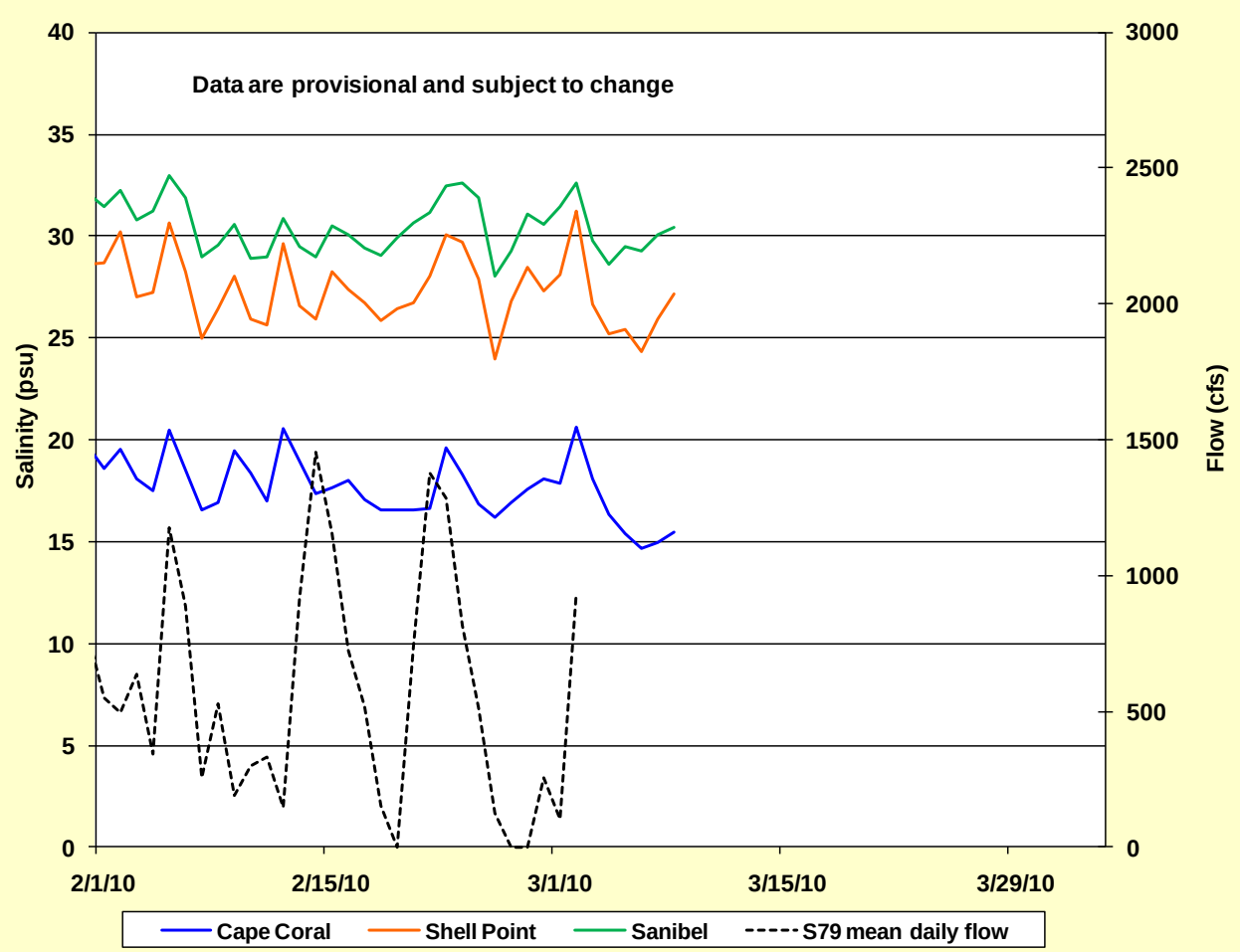
The Lake Regulation Schedule calls for releases to the Caloosahatchee estuary up to 3,000 cfs. A seven day pulse release with an average of 1200 cfs from S-79 is recommended. The SFWMD is presently working with the U.S. Army Corps of Engineers to design a field study to determine short term biological and physicochemical effects of low level pulse releases from S79 on the estuary downstream to Shell Point.

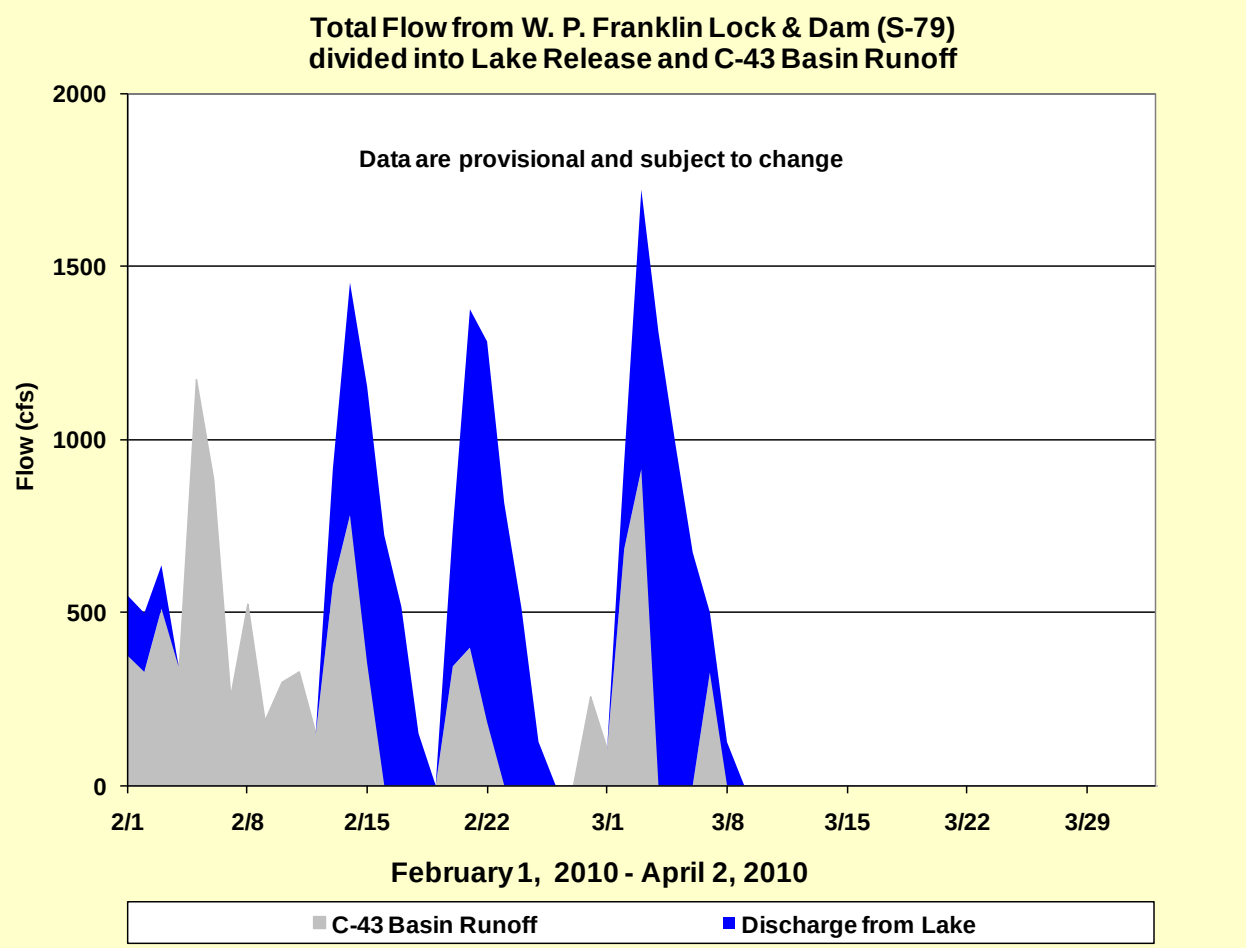



Salinity Envelope and Surface and Bottom Mean Daily Salinity
in the St. Lucie Estuary at US1
Data provisional and subject to change
Salinity (psu)
35
30
25
20
15
10
5
0
2/1
2/6
2/11
2/16
2/21
2/26
3/3
3/8
3/13
3/18
3/23
3/28
February 1, 2010 - March 31, 2010
US1 surface
US1 bottom
30 day prior US1 surface daily mean
30 day prior US1 bottom daily mean


Charlotte Harbor
Pine Island Sound
San Carlos Bay
GULF OF MEXICO
Estero Bay
LEE CO.
Caloosahatchee Estuary
Ft. Myers
Marker52
Cape Coral
Shell Point
Sanibel
BR31
S79
Vall75
41
75
78
80
867
0 0.9 1.8 2.7 3.6 4.5 Miles
0 1 2 4 6 8 10 Kilometers
Caloosahatchee Estuary
Salinity Stations


Salinity at City of Ft. Myers Yacht Basin, I-75 Bridge, and
Upper Limit Exceedance of Caloosahatchee MFL and Mean Daily Flow from S79
Data are provisional and subject to change
Surface Salinity (psu)
Flow (cfs)
22
20
18
16
14
12
10
8
6
4
2
0
3000
2700
2400
2100
1800
1500
1200
900
600
300
0
2/1/10
2/15/10
3/1/10
3/15/10
3/29/10
mean daily surface salinity
Ft. Myers 30 day prior mean surface salinity
upper limit for daily mean salinity
upper limit for 30d mean salinity
Vall75 30 day prior mean surface salinity
S79 mean daily flow


Data are provisional and subject to change
Salinity (psu)
Flow (cfs)
40
35
30
25
20
15
10
5
0
3000
2500
2000
1500
1000
500
0
2/1/10
2/15/10
3/1/10
3/15/10
3/29/10
Cape Coral
Shell Point
Sanibel
S79 mean daily flow



GREATER EVERGLADES

Water Conservation Areas (WCA):

Rainfall in the conservation areas and Everglades National Park (ENP) was light (see Raindar image and below), with a local high of 1.7" in ENP.

Rain:				
	WCA-1:	0.25 inches	WCA-3A:	0.34 inches
	WCA-2A:	0.49 inches	WCA-3B:	0.22 inches
	WCA-2B:	0.18 inches	ENP:	0.29 inches

The week's pan evaporation of 1.14 inches exceeded basin rainfall. Stages fell at most gauges except in WCA-2A and northern WCA-3A (gauge 62) (see WCA Stages spreadsheet and below).

Stage Change:				
	WCA-1:	-0.09 feet	WCA-3A:	-0.08 feet
	WCA-2A:	0.03 feet	WCA-3B:	-0.05 feet
	WCA-2B:	-0.08 feet	NESRS:	-0.03 feet

The Greater Everglades continue to follow a typical dry season pattern (see Water Depths map below). Water levels continue to decline throughout the region (darker greens and lighter blues are expanding) and dry areas continue to expand in size (yellows to browns), particularly in the Park and Big Cypress Preserve, relative to one and two months ago. Greater Everglades water depths (see Depth differences map below) are shallower than a week ago and a month ago, but are much deeper than a year ago, particularly in Big Cypress, ENP, and the northern conservation areas, when the region was in a major drought.

There are areas in central WCA-2A, northern and western WCA-3A, along Shark River Slough in ENP, and in eastern Big Cypress Preserve where water depths are considered good for wading bird feeding (shown as green areas on Birds-Depths Map below). The Birds-Recession Map below indicates that recession rates were good (shown as green) for wading birds in WCA-3A and parts of Everglades National Park but are a bit slow (shown as blue) in most of the rest of the region.

The water stages in most of the marsh areas have been declining this week (see Regulation schedules). In WCA-1 (the Wildlife Refuge), marsh stages have fallen to regulation this week. Canal stage in WCA-2A has dropped rapidly over the week to -0.4 below regulation, while the marsh stage is 0.8 feet above regulation. In WCA-3A, the marsh stage is approximately -0.2 feet below regulation in Zone E1.

Prescribed burns by Fish and Wildlife Conservation Commission occurred in WCA-3A this week (see WCA-3A Burn Notification map below).

Everglades National Park (ENP) and Florida Bay:

Light rain fell across Everglades National Park (ENP) and across Florida Bay, with heavier rain falling over the southern Glades and Cape Sable. ENP stations measured 0.1 inches – 1.1 inches of rainfall, and the basin-wide, spatially-averaged weekly RAINDAR total was 0.3 inches in each of the ENP and C-111 basins (see Raindar below).

Stages mostly declined across ENP wetland stations (see ENP Stage plots below). Water levels were unchanged in Shark River Slough but dropped -3.5 inches at the Taylor Slough Bridge. To the south, water levels dropped -0.7 inches and -0.6 inches in the ENP panhandle and in Craighead Basin, respectively.

Salinity was mostly stable in Florida Bay (see ENP Salinity plots below). In the near shore eastern Bay, salinity was steady near 20 psu in Long Sound but increased slightly from the lower 20s to middle 20s at the Little Madeira Bay platform. Further into the Bay in Duck Key Basin, salinity declined slightly but remained in the middle 20s. The 30 day moving average salinity at the Taylor River platform (used for tracking the Florida Bay Minimum Flows and Levels Rule) was unchanged at 0.9 psu, and the daily mean average salinity was similarly unchanged at 0.9 psu. In the north central Bay, an early week wind driven Bay water reversal caused salinity to increase from the lower teens to

the lower 20s before dropping back to the lower teens mid-week, where it remained stable through the week's end, in McCormick Creek. A similar trend occurred in Terrapin Bay where salinity increased from the upper teens to the lower 20s before dropping back to the lower-middle teens. Platform problems at the Whipray Basin station preclude reporting on salinity trends in the central Bay. To the west, in the upstream reaches of Shark River Slough, salinity increased slightly from 3.6 psu to 4.0 psu.

Birds and Wildlife

Wading Birds: Friday's wading bird flight was limited by helicopter time constraints. Based on observations from a limited flight path, northeast WCA-3A still has quite a few birds, but flocks have decreased somewhat in WCA-1 and especially in WCA-2A.

Snail Kites: A Snail Kite survey conducted two weeks ago found 15 active kite nests scattered throughout WCA-3A. Most (eight nests) are located in the southwest, with one in the central region, one in the northwest and there are five in the northeast. Birds were still at a very early stage of the three month nesting season with all nests either at the construction or incubation stage. Recent observations suggest a few nests may have abandoned, probably due to the recent cold spell, but subsequent surveys are needed to confirm these changes. Note that Snail Kites can re-nest at this early stage of the breeding season if conditions are appropriate.

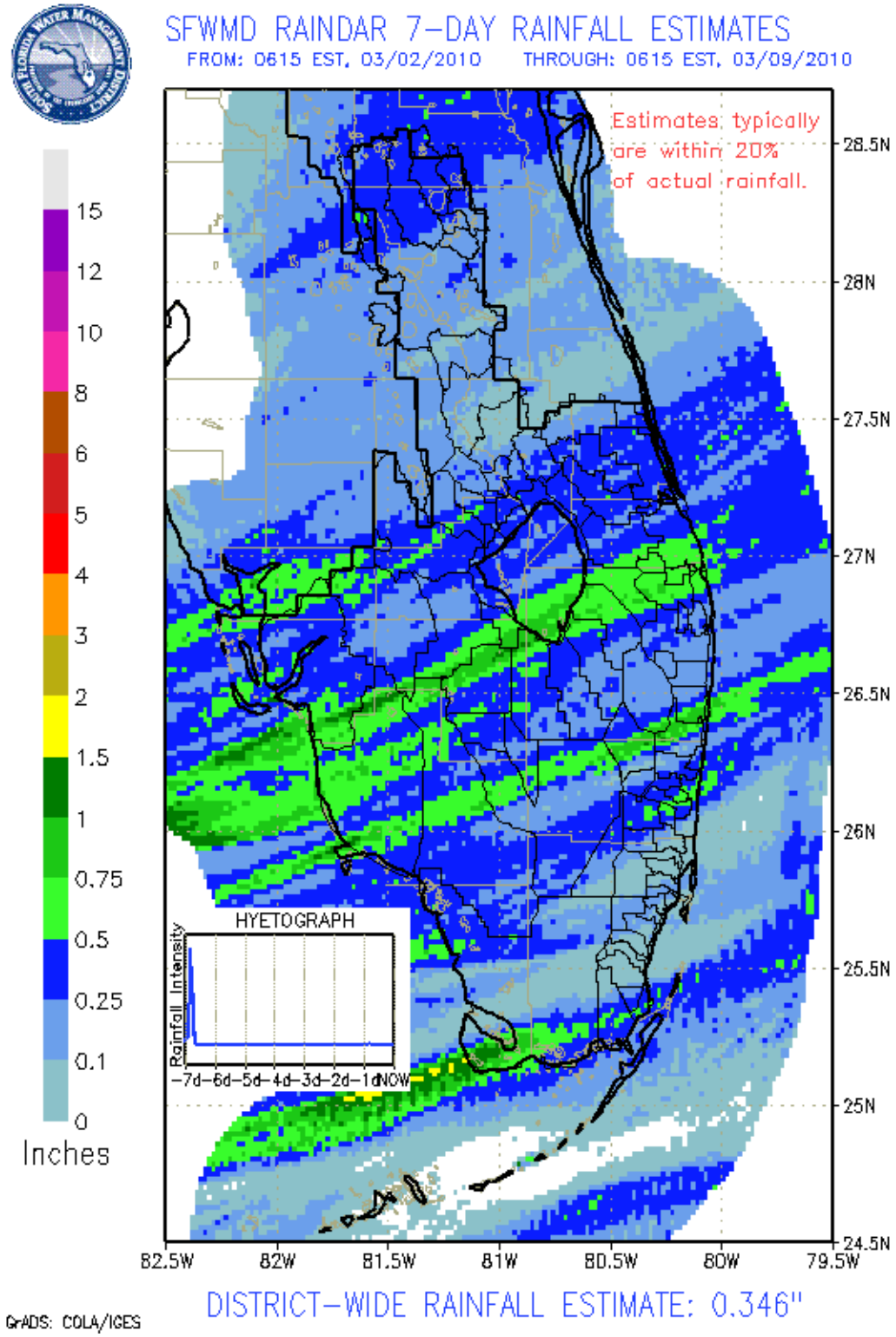
Cape Sable Seaside Sparrow: Water levels continue to drop at NP205 and are on course for appropriate sparrow nesting conditions.

Water Management Recommendations

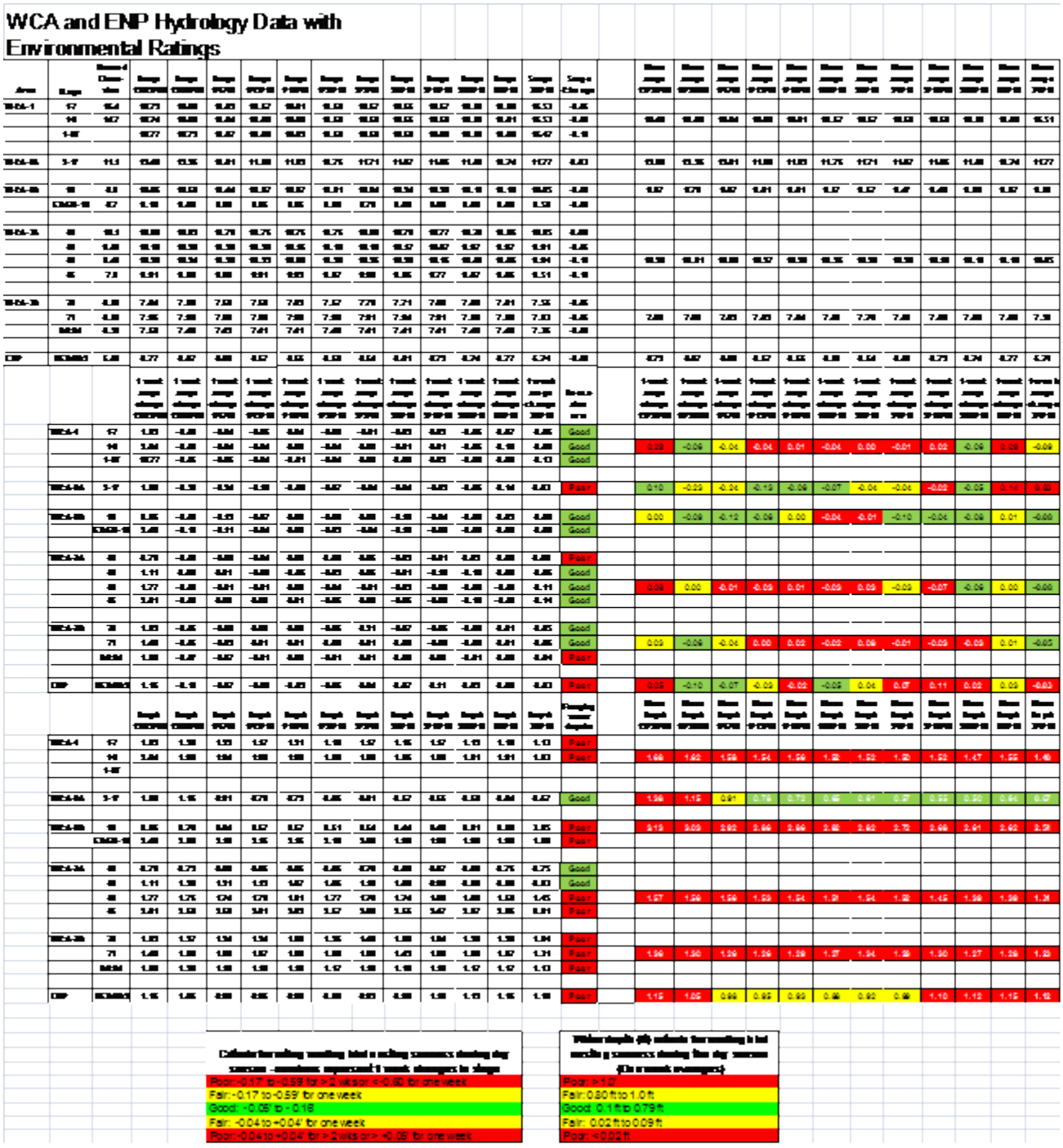
Water levels remain a little deep in WCAs 1 and 2, so an increase in recession rates would benefit foraging wading birds in one or both of these regions (optimum: -0.04 to -0.15 feet/week). Recession rates in southern WCA 3A (gauges 64 and 65) over the past week were too fast for Snail Kite nesting (optimum: -0.05 feet/week). Given the relatively large numbers of active Snail Kite nests in southern 3A, it would be preferred to slow current recession rates a little. (Note that these rapid recession rates were not responsible for the putative nest abandonments). Any movement of water into ENP should not increase water levels at NP205.

Attachments

Raindar:



WCA Stages spreadsheet:



WCA and ENP Hydrology Data with Environmental Ratings

Area	Gage	Observed Observation	Gage 09/29/18	Gage 09/30/18	Gage 10/01/18	Gage 10/02/18	Gage 10/03/18	Gage 10/04/18	Gage 10/05/18	Gage 10/06/18	Gage 10/07/18	Gage 10/08/18	Gage 10/09/18	Gage 10/10/18	Gage 10/11/18	Gage Change	Water change 09/29/18	Water change 09/30/18	Water change 10/01/18	Water change 10/02/18	Water change 10/03/18	Water change 10/04/18	Water change 10/05/18	Water change 10/06/18	Water change 10/07/18	Water change 10/08/18	Water change 10/09/18	Water change 10/10/18
WCA-1	17	15.4	15.73	15.68	15.63	15.57	15.51	15.53	15.57	15.55	15.57	15.58	15.58	15.58	15.53	-0.05												
	1H	15.7	15.74	15.68	15.64	15.58	15.58	15.53	15.53	15.55	15.53	15.58	15.58	15.61	15.53	-0.08	15.68	15.68	15.64	15.58	15.61	15.57	15.57	15.53	15.53	15.58	15.58	15.51
	1-1F		15.77	15.73	15.67	15.68	15.63	15.53	15.53	15.53	15.58	15.58	15.58	15.58	15.47	-0.10												
WCA-2A	2-1F	11.3	13.68	13.55	13.51	11.58	11.53	11.75	11.71	11.67	11.65	11.68	11.74	11.77	11.83	0.05	13.58	13.55	13.51	11.58	11.53	11.75	11.71	11.67	11.65	11.68	11.74	11.77
WCA-2B	2B	8.8	13.65	13.53	13.44	13.37	13.37	13.31	13.34	13.34	13.38	13.19	13.19	13.05	13.05	-0.08	13.37	13.79	13.37	13.31	13.31	13.37	13.37	13.47	13.48	13.38	13.37	13.38
	CM28-1B	8.7	8.19	8.08	8.08	8.05	8.05	8.08	8.79	8.08	8.08	8.08	8.08	8.38	8.38	-0.08												
WCA-2C	2C	10.1	13.58	13.53	13.79	13.75	13.75	13.75	13.68	13.79	13.77	13.28	13.65	13.65	13.68													
	2D	8.68	13.18	13.38	13.38	13.38	13.35	13.18	13.18	13.37	13.67	13.37	13.37	13.31	13.65													
	2E	8.48	13.38	13.34	13.38	13.33	13.08	13.38	13.35	13.38	13.35	13.08	13.35	13.34	13.34	-0.10	13.38	13.31	13.08	13.37	13.38	13.35	13.38	13.38	13.38	13.18	13.18	13.35
	2E	7.8	8.31	8.08	8.08	8.31	8.33	8.37	8.38	8.35	8.77	8.37	8.35	8.33	8.38	-0.10												
WCA-3A	3A	8.08	7.84	7.88	7.93	7.93	7.83	7.37	7.71	7.71	7.88	7.88	7.81	7.55	8.05	-0.05												
	3A	8.08	7.35	7.38	7.38	7.38	7.38	7.38	7.31	7.34	7.31	7.38	7.38	7.33	8.05	-0.05	7.88	7.88	7.85	7.83	7.84	7.88	7.78	7.88	7.88	7.88	7.88	7.38
	3A3A	8.38	7.33	7.48	7.43	7.41	7.41	7.48	7.41	7.41	7.41	7.48	7.48	7.35	8.08	-0.08												
CSP	SCM3A3	8.08	8.77	8.67	8.68	8.67	8.65	8.63	8.64	8.61	8.73	8.74	8.77	8.74	8.88	-0.08	8.73	8.67	8.68	8.67	8.65	8.68	8.64	8.68	8.73	8.74	8.77	8.74

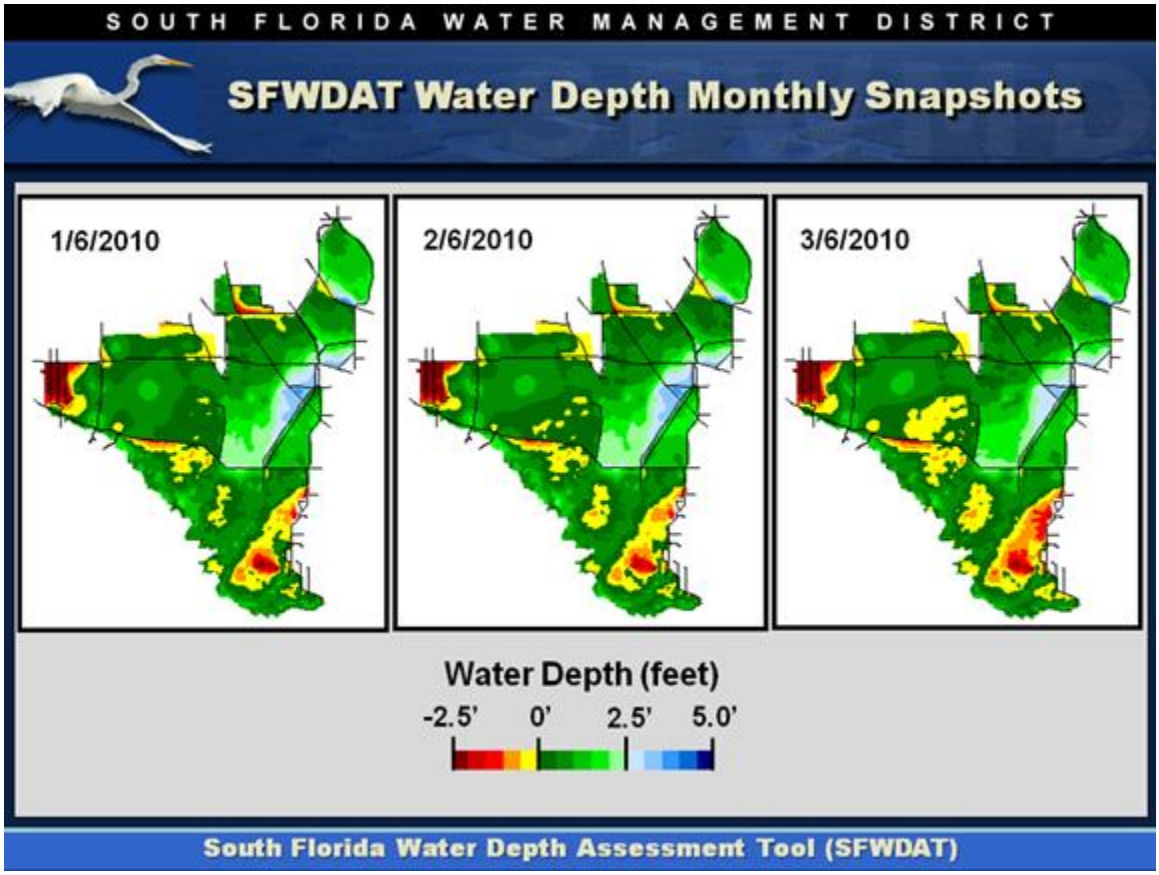
			1 week change 09/29/18	1 week change 09/30/18	1 week change 10/01/18	1 week change 10/02/18	1 week change 10/03/18	1 week change 10/04/18	1 week change 10/05/18	1 week change 10/06/18	1 week change 10/07/18	1 week change 10/08/18	1 week change 10/09/18	1 week change 10/10/18	1 week change 10/11/18	Recession rate	1 week change 09/29/18	1 week change 09/30/18	1 week change 10/01/18	1 week change 10/02/18	1 week change 10/03/18	1 week change 10/04/18	1 week change 10/05/18	1 week change 10/06/18	1 week change 10/07/18	1 week change 10/08/18	1 week change 10/09/18	1 week change 10/10/18
WCA-1	17		1.01	-0.01	-0.04	-0.04	-0.04	-0.03	-0.01	-0.01	-0.01	-0.01	-0.02	-0.01	-0.05	Good												
	1H		1.04	-0.01	-0.04	-0.04	0.00	-0.04	0.00	-0.01	-0.01	-0.01	-0.10	0.00		Good	0.00	-0.00	-0.04	-0.04	0.01	-0.04	0.00	-0.01	0.02	-0.00	0.00	-0.00
	1-1F		15.77	-0.05	-0.05	-0.04	-0.01	-0.04	0.00	0.00	-0.01	-0.00	-0.00	-0.10		Good												
WCA-2A	2-1F		1.00	-0.10	-0.04	-0.10	-0.00	-0.07	-0.04	-0.04	-0.01	-0.05	-0.14	-0.03		Poor	0.10	-0.20	-0.04	-0.10	-0.00	-0.07	-0.04	-0.04	-0.02	-0.05	0.10	0.03
WCA-2B	2B		0.05	-0.00	-0.10	-0.07	0.00	-0.06	0.00	-0.10	-0.04	-0.00	0.05	-0.00		Good	0.00	-0.00	-0.10	-0.06	0.00	-0.04	-0.01	-0.10	-0.04	-0.00	0.01	-0.00
	CM28-1B		1.00	-0.10	-0.11	-0.04	0.00	-0.05	-0.04	-0.10	-0.00	-0.00	0.00	-0.00		Good												
WCA-3A	3A		0.71	-0.00	-0.00	-0.04	0.00	0.00	0.05	-0.05	-0.01	0.05	0.00	0.05		Poor												
	3A		1.11	0.00	0.01	-0.00	-0.05	-0.03	0.05	-0.01	-0.10	-0.10	0.00	0.05		Good												
	3A		1.17	-0.00	-0.01	-0.01	0.00	-0.04	-0.01	-0.03	-0.00	-0.00	-0.00	-0.11		Good	0.00	0.00	-0.01	-0.03	0.01	-0.00	0.00	-0.00	-0.07	-0.00	0.00	-0.00
	3C		1.01	-0.00	0.00	0.00	0.01	-0.05	0.00	-0.05	-0.00	-0.10	-0.00	-0.14		Good												
WCA-3B	3B		1.05	-0.05	-0.00	0.00	0.00	-0.05	0.01	-0.07	-0.05	-0.00	0.01	0.05		Good												
	3B		1.00	-0.05	-0.05	0.01	0.01	0.00	0.00	-0.00	-0.00	-0.00	0.01	0.05		Good	0.00	-0.00	-0.04	0.00	0.00	-0.00	0.00	-0.01	-0.00	0.00	0.01	-0.00
	3B		1.00	-0.07	-0.07	-0.01	0.00	-0.04	-0.07	-0.07	-0.00	-0.00	-0.00	-0.04		Poor												
CSP	SCM3A3		1.15	-0.10	-0.10	-0.07	-0.03	-0.05	-0.04	-0.07	-0.11	-0.05	-0.00	-0.00		Poor	0.05	-0.10	-0.07	-0.03	-0.00	-0.05	0.04	0.07	0.11	0.00	0.00	-0.00

			Depth 09/29/18	Depth 09/30/18	Depth 10/01/18	Depth 10/02/18	Depth 10/03/18	Depth 10/04/18	Depth 10/05/18	Depth 10/06/18	Depth 10/07/18	Depth 10/08/18	Depth 10/09/18	Depth 10/10/18	Depth 10/11/18	Ponding water depths	Water Depth 09/29/18	Water Depth 09/30/18	Water Depth 10/01/18	Water Depth 10/02/18	Water Depth 10/03/18	Water Depth 10/04/18	Water Depth 10/05/18	Water Depth 10/06/18	Water Depth 10/07/18	Water Depth 10/08/18	Water Depth 10/09/18	Water Depth 10/10/18
WCA-1	17		1.01	1.01	1.01	1.02	1.01	1.01	1.02	1.05	1.02	1.01	1.01	1.01	1.01	Poor												
	1H		1.04	1.03	1.04	1.03	1.03	1.03	1.03	1.05	1.03	1.01	1.01	1.01	1.03	Poor	1.68	1.62	1.58	1.54	1.58	1.52	1.52	1.50	1.52	1.47	1.52	1.48
	1-1F																											
WCA-2A	2-1F		1.00	1.05	0.91	0.78	0.73	0.85	0.81	0.87	0.85	0.83	0.84	0.87		Good	1.08	1.15	0.91	0.78	0.73	0.85	0.81	0.87	0.85	0.83	0.84	0.87
WCA-2B	2B		0.85	0.78	0.84	0.87	0.87	0.81	0.84	0.84	0.88	0.81	0.88	0.85		Poor	3.19	3.09	2.93	2.80	2.80	2.80	2.82	2.78	2.88	2.81	2.82	2.79
	CM28-1B		1.48	1.08	1.08	1.05	1.05	1.18	1.08	1.08	1.08	1.08	1.08	1.08		Poor												
WCA-3A	3A		0.71	0.73	0.88	0.85	0.85	0.85	0.78	0.88	0.87	0.88	0.75	0.75		Good												
	3A		1.11	1.08	1.01	1.03	1.07	1.05	1.08	1.08	0.98	0.98	0.98	0.83		Good												
	3A		1.17	1.75	1.74	1.78	1.81	1.77	1.78	1.74	1.68	1.68	1.03	1.45		Poor	1.57	1.54	1.58	1.53	1.54	1.51	1.54	1.52	1.45	1.58	1.58	1.54
	3C		1.01	1.03	1.03	1.01	1.03	1.17	1.08	1.15	1.07	1.17	1.15	1.11		Poor												
WCA-3B	3B		1.05	1.17	1.14	1.14	1.08	1.15	1.08	1.08	1.04	1.18	1.18	1.04		Poor												
	3B		1.08	1.08	1.08	1.07	1.08	1.08	1.08	1.05	1.08	1.08	1.07	1.11		Poor	1.58	1.58	1.58	1.58	1.58	1.57	1.54	1.58	1.58	1.57	1.58	1.58
	3B		1.00	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.07	1.07	1.07	1.03		Poor												
CSP	SCM3A3		1.15	1.05	0.98	0.93	0.93	0.98	0.93	0.98	1.10	1.13	1.13	1.13		Poor	1.13	1.05	0.98	0.93	0.93	0.98	0.93	0.98	1.10	1.13	1.13	1.13

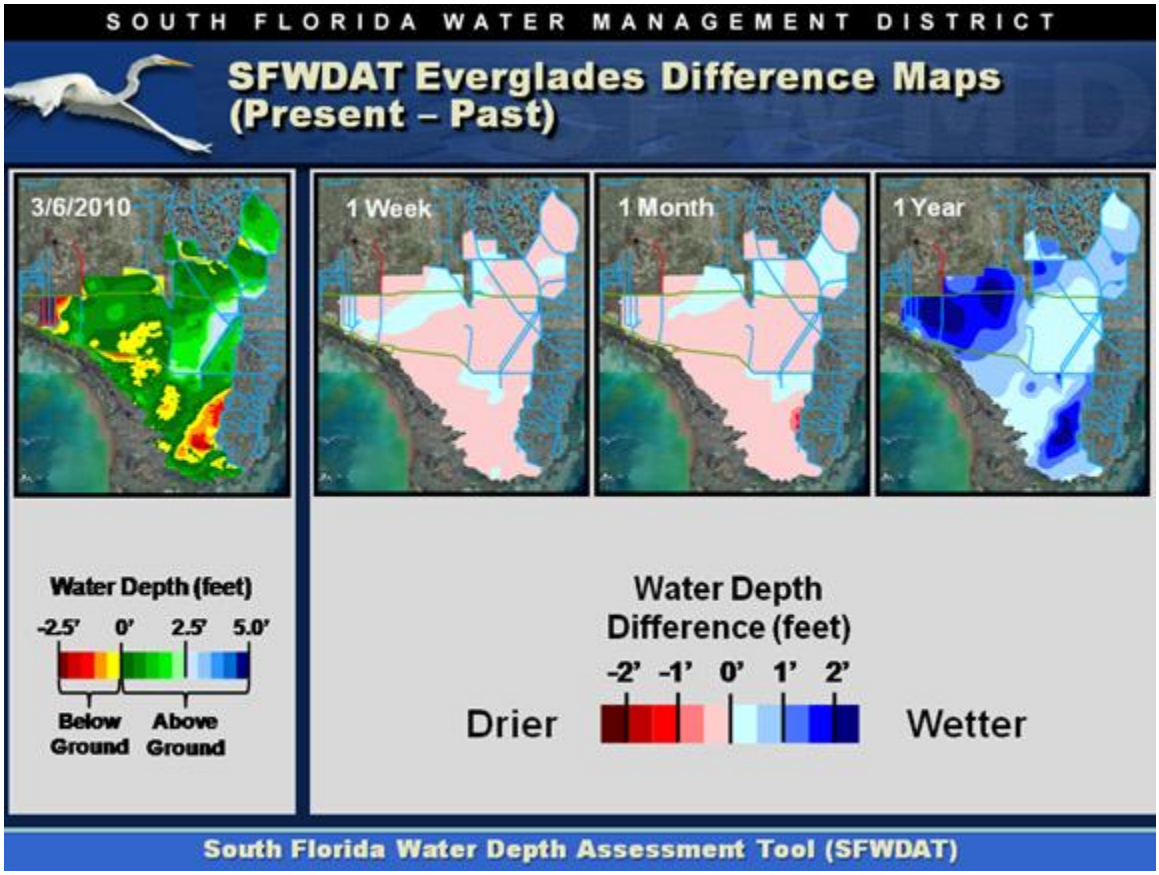
Colorado tracking monthly total recharge summary during dry season - summary represented 1 week changes in stage
Poor: -0.17 to -0.59' for > 2 wks or < -0.60' for one week
Fair: -0.17 to -0.59' for one week
Good: -0.05' to - 0.16'
Fair: -0.04 to +0.04' for one week
Poor: -0.04 to +0.04' for > 2 wks or > +0.05' for one week

Water depth (ft) colorado tracking total monthly recharge summary during dry season (On a month average)
Poor: > 1.0'
Fair: 0.80 ft to 1.0 ft
Good: 0.1 ft to 0.79 ft
Fair: 0.02 ft to 0.09 ft
Poor: < 0.02 ft

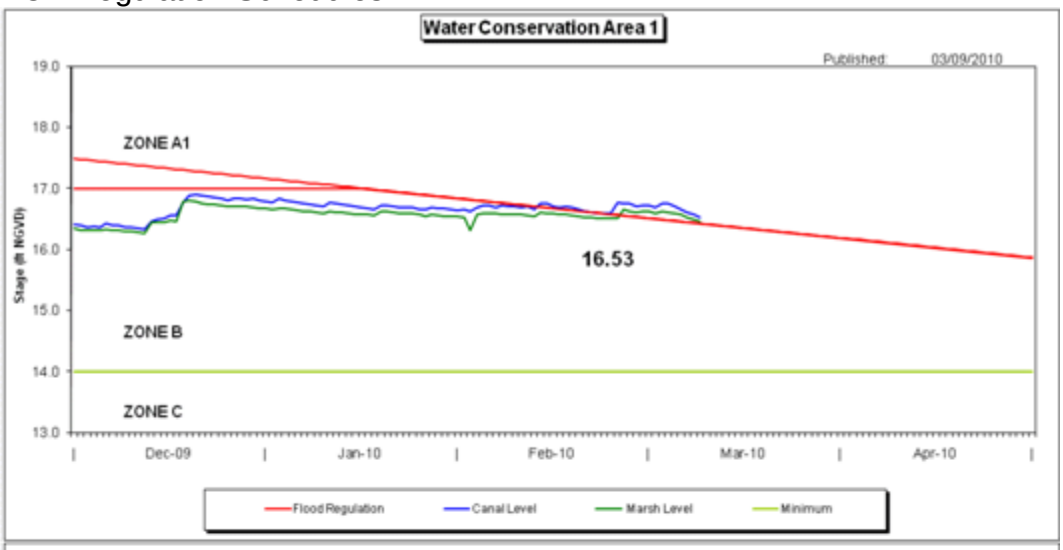
Water Depths:

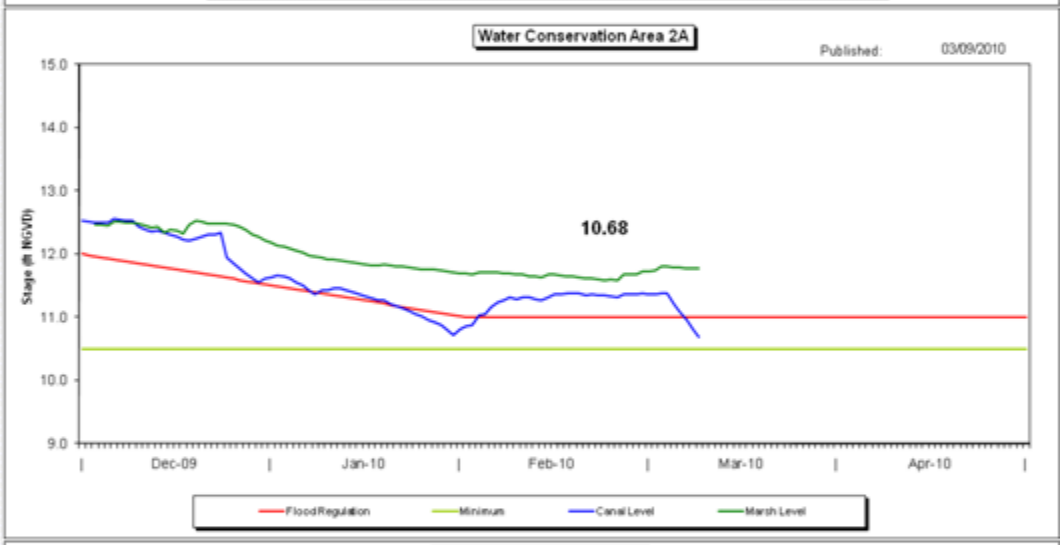


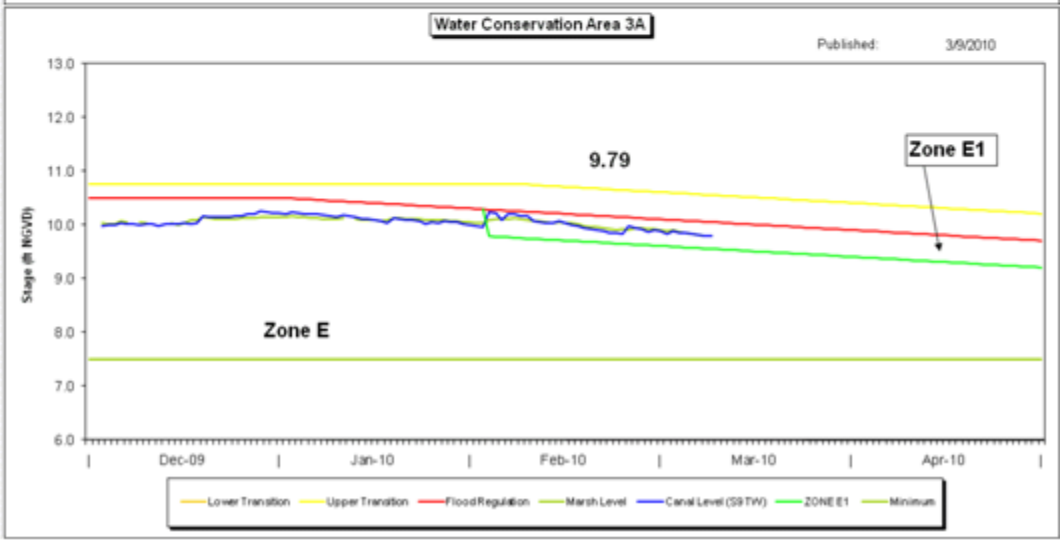
Depth Differences:



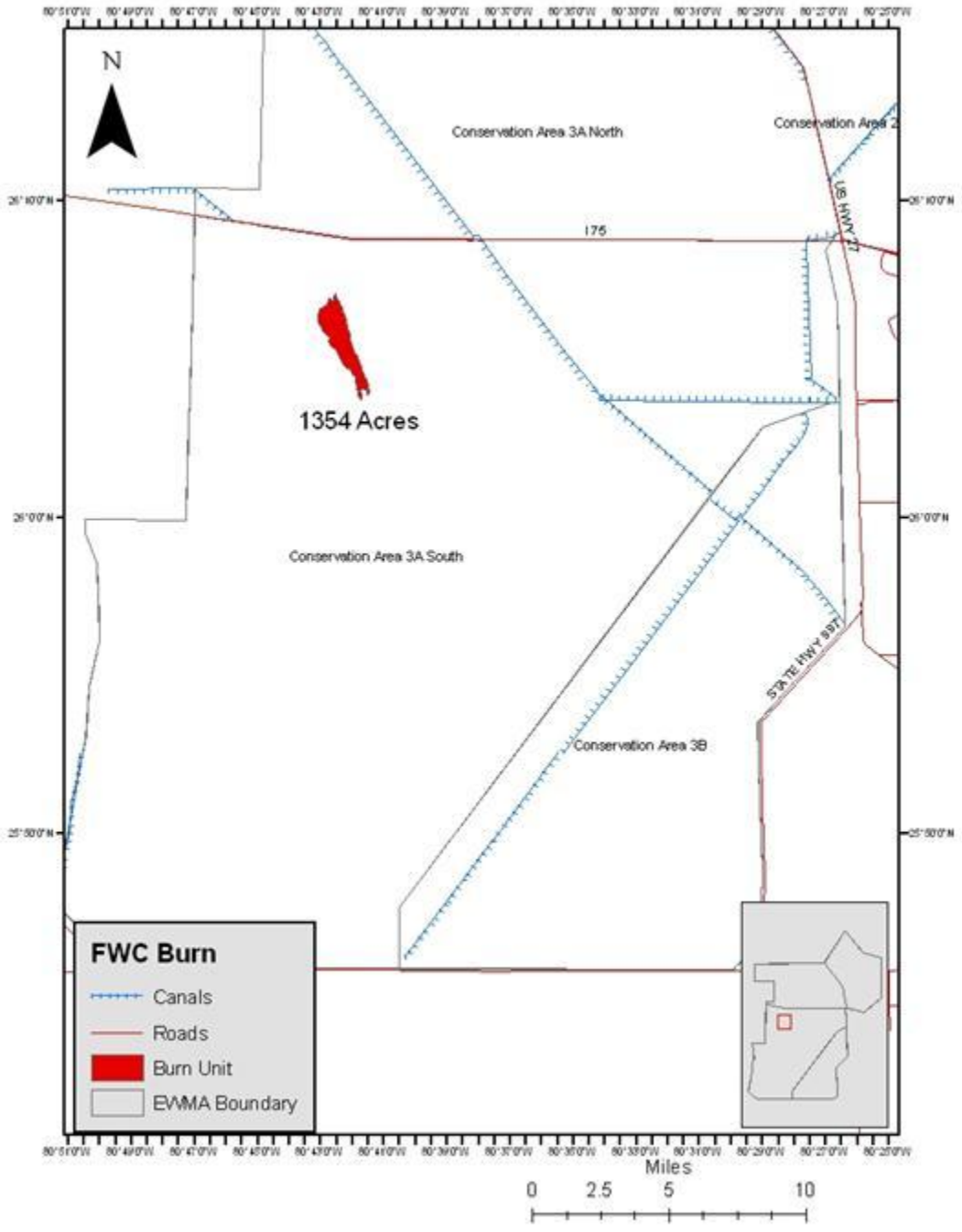
WCA Regulation Schedules:



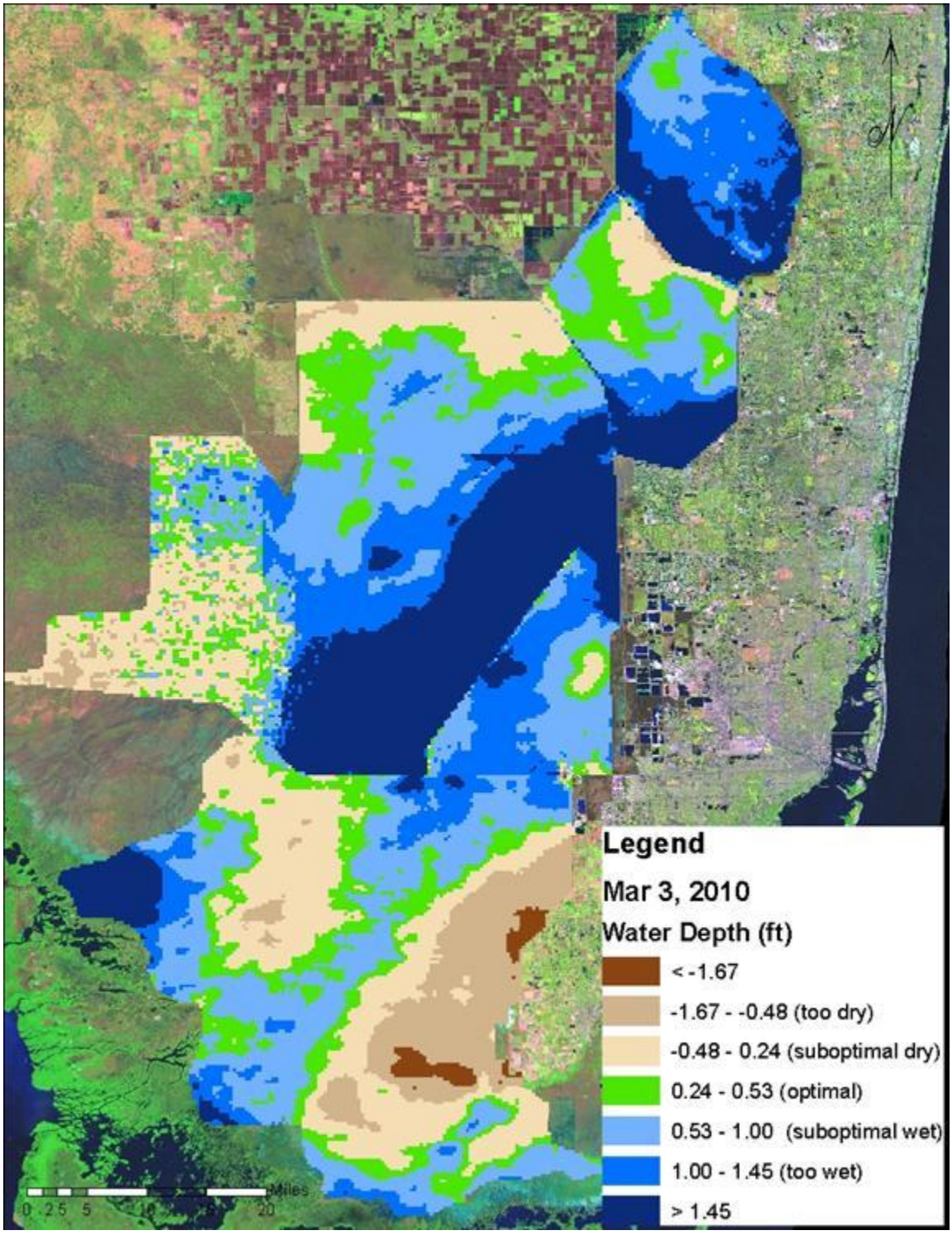




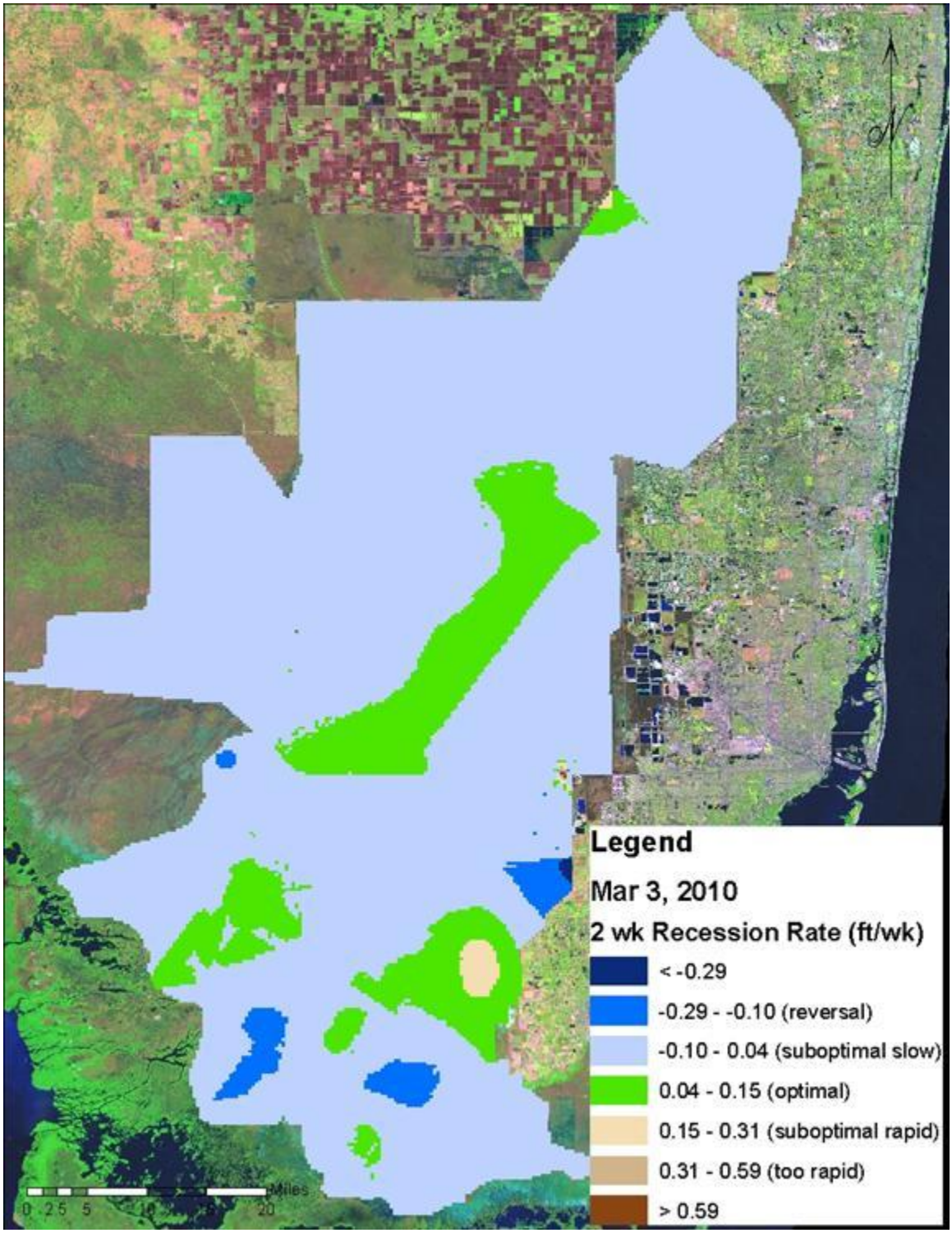
WCA-3A Burn Notification Map:



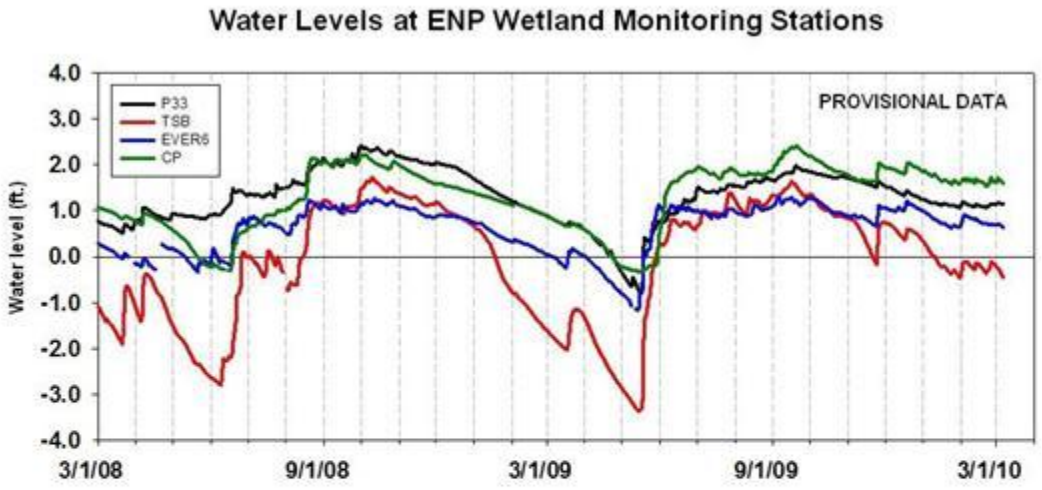
Birds Depths Map:



Birds Recession Rates:



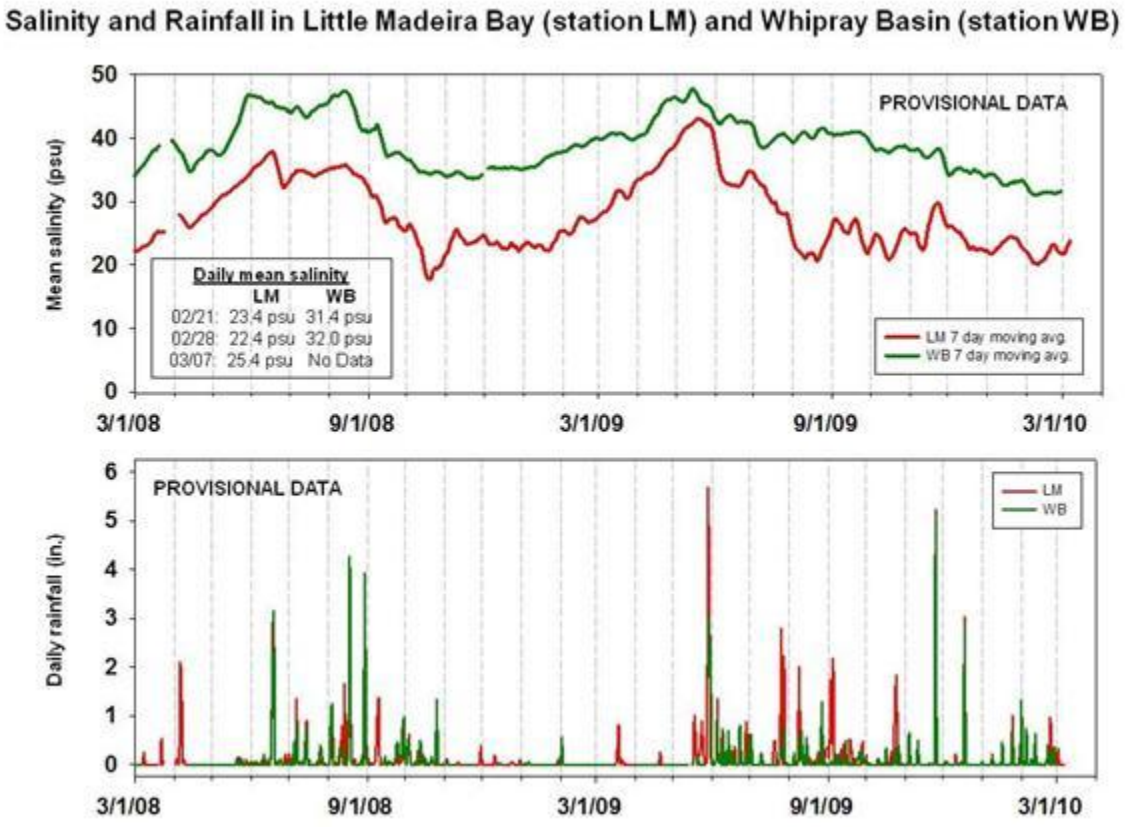
ENP Stages:



DAILY MEAN WATER LEVEL

Date	P33	TSB	EVER6	CP
2/21	1.08	-0.37	0.71	1.54
2/28	1.15	-0.16	0.70	1.65
3/07	1.15	-0.45	0.64	1.60

ENP LM/WB Salinity:



ENP MFL/TR Salinity: